

ABSTRACT OF THE DISCLOSURE

A helium purge for a grating based line narrowing device for minimizing thermal distortions in line narrowed lasers producing high energy laser beams at high repetition rates. Applicants have shown substantial improvement in performance with the use of helium purge as compared to prior art nitrogen purges.

In preferred embodiments a stream of helium gas is directed across the face of the grating. In other embodiments the purge gas pressure is reduced to reduce the optical effects of the hot gas layer.